

**SOT 54<sup>th</sup> Annual Meeting and ToxExpo**  
**San Diego, CA • March 22-26, 2015**  
**NIEHS and NTP Activities**

**NIEHS, NTP, and EHP Exhibit**

**Booth 2226/2228/2127/2129**

CC Exhibit Hall

**ToxExpo Hours:**

Monday, March 23 9:00 AM - 4:30 PM

Tuesday, March 24 8:30 AM - 4:30 PM

Wednesday, March 25 8:30 AM - 4:30 PM

**Research Funding Information Room**

CC Room 11A

Tuesday, March 24 9:30 AM - 4:30 PM

Wednesday, March 25 9:30 AM - 4:30 PM

**Sunday, March 22, 8:05 AM to 5:00 PM, CC Room 33B**

**Education Outreach Activities and Events: Undergraduate Education Program**

**Chairperson(s):** Kristini Miles, Kimberly-Clark Corporation, Roswell, GA; and Jorge Naciff, Procter & Gamble Company, Mason, OH.

2:05 PM to 2:55 PM **Career Roundtable: Opportunities in Toxicology**

Chair: Robert Casillas, MRIGlobal, Mason, OH.

Team 1

Academia: Neera Tewari-Singh, University of Colorado Denver, Denver, CO;

Government: Mary Martin Gant, NIEHS, Bethesda, MD; Industry: Sharon Holt Daily, GSK, Research Triangle Park, NC.

**Sunday, March 22, 8:15 AM to 12:00 Noon, CC Ballroom 6C**

**Continuing Education: Demystifying Mixtures: From Study Design Selection to Risk Assessment Application**

**Chairperson(s):** Jane Ellen Simmons, US EPA, Research Triangle Park, NC; and Cynthia V. Rider, NIEHS, Research Triangle Park, NC.

8:15 AM **Demystifying Mixtures: From Study Design Selection to Risk Assessment Application.** J. Simmons. US EPA, Research Triangle Park, NC.

8:40 AM **Berenbaum and Beyond: Concepts and Theories Underlying Mixtures Research and Cumulative Risk Assessment.** C. V. Rider. NIEHS, Research Triangle Park, NC.

**Workshop Session: Linking Early-Life Stages: The First Step toward Lifecourse Risk Assessment Approaches for Protecting Vulnerable Populations**

**Chairperson(s):** Sally P. Darney, ORD, US EPA, Research Triangle Park, NC; and Harvey J. Clewell, The Hamner Institutes for Health Sciences, Research Triangle Park, NC.

**Abstract 39**

10:18 AM      **Improving Infant Exposure and Health Risk Estimates: Using Serum Data to Predict Polybrominated Diphenyl Ether Concentrations in Breast Milk.** S. Marchitti<sup>1</sup>, J. S. LaKind<sup>2</sup>, D. Q. Naiman<sup>3</sup>, C. M. Berlin<sup>4</sup>, E. P. Hines<sup>5</sup>, S. E. Fenton<sup>6</sup>, and J. F. Kenneke<sup>1</sup>. <sup>1</sup>NERL, US EPA, Athens, GA; <sup>2</sup>LaKind Associates, LLC, Catonsville, MD; <sup>3</sup>Johns Hopkins University, Baltimore, MD; <sup>4</sup>Penn State College of Medicine, Hershey, PA; <sup>5</sup>US EPA, Research Triangle Park, NC; and <sup>6</sup>NIEHS, Research Triangle Park, NC.

**Workshop Session: The US Tox21 Collaboration: Advances Made and Lessons Learned**

**Chairperson(s):** Linda S. Birnbaum, NIEHS, Research Triangle Park, NC; and Robert Kavlock, US EPA/ORD, Washington, DC.

**Abstract 42**

9:15 AM      **The US Tox21 Collaboration: Advances Made and Lessons Learned.** L. S. Birnbaum<sup>1</sup>, and R. Kavlock<sup>2</sup>. <sup>1</sup>NIEHS, Research Triangle Park, NC; and <sup>2</sup>US EPA/ ORD, Washington, DC.  
**Introduction.** L. S. Birnbaum<sup>1</sup>, and R. Kavlock<sup>2</sup>. <sup>1</sup>NIEHS, Research Triangle Park, NC; and <sup>2</sup>US EPA/ ORD, Washington, DC.

**Abstract 44**

9:50 AM      **Tox21 Phase II: Testing the 10K Library in Quantitative High-Throughput Screening Assays.** A. Simeonov. Division of Preclinical Innovation, National Center for Advancing Translational Sciences, Rockville, MD. Sponsor: R. Tice.

**Abstract 45**

10:15 AM      **Tox21 Phase III: Improving on Biological Coverage, Relevance, and Public Outreach.** R. S. Paules. NIEHS/NTP, Research Triangle Park, NC.

**Abstract 46**

10:40 AM      **Prioritization and Predictive Toxicology: Estrogen Receptor Active Compounds.** W. Casey. NIEHS, Durham, NC.

**Platform Session: Disposition and Pharmacokinetics**

**Chairperson(s):** Matthew W. Himmelstein, Investigative Sciences, DuPont Haskell Global Centers for Human Health and Environmental Sciences, Newark, DE; and Amy Roe, Procter & Gamble Co., Williamstown, KY.

**Abstract 60**

9:15 AM      **Preliminary Toxicokinetic Evaluation of Hydroxyurea in Hsd:Sprague-Dawley (SD) Rat Dams and Their Offspring for Designing Toxicokinetic and Toxicity Studies.** T. Fennell<sup>1</sup>, S. Black<sup>1</sup>, M. A. Silinski<sup>1</sup>, R. A. Fernando<sup>1</sup>, B. McIntyre<sup>2</sup>, V. G. Robinson<sup>2</sup>, and S. Waidyanatha<sup>2</sup>. <sup>1</sup>RTI International, Research Triangle Park, NC; and <sup>2</sup>Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC.

Monday, March 23, 9:30 AM to 12:30 PM, CC Exhibit Hall

**Poster Session: Biotransformation and Cytochrome P450**

**Chairperson(s):** Patrick Iversen, Oregon State University, Corvallis, OR.

**Abstract 73; Poster Board 106**

**Role of CYP2B in Phenobarbital-Induced Hepatocyte Proliferation in Mice.** L. Li<sup>1</sup>, X. Bao<sup>2</sup>, M. Negishi<sup>3</sup>, and X. Ding<sup>1</sup>. <sup>1</sup>College of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY; <sup>2</sup>Wadsworth Center, New York State Department of Health, Albany, NY; and <sup>3</sup>National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

**Poster Session: Liver**

**Chairperson(s):** Martin J. Ronis, University of Arkansas for Medical Sciences, Little Rock, AR.

**Abstract 99; Poster Board 135**

**Liver Microarray Analysis by Estrous Cycle Staging after 90-Day Tetrabromobisphenol A (TBBPA) Exposure.** B. Merrick, K. R. Shockley, D. L. Morgan, K. Gerrish, S. Elmore, J. P. Stanko, A. R. Pandiri, T. Ton, and J. K. Dunnick. DNTP, NIEHS, Research Triangle Park, NC.

**Poster Session: Alternatives to Mammalian Models I - Cardio, Neuro, Developmental**

**Chairperson(s):** Xuefei Cao, DGMT, FDA/NCTR, Jefferson, AR; and Tamara L. Tal, Integrated Systems Toxicology Division, US EPA, Research Triangle Park, NC.

**Abstract 236; Poster Board 402**

**Identification of Chemical Vascular Disruptors during Development Using an Integrative Predictive Toxicity Model, Zebrafish, and *In Vitro* Functional Angiogenesis Assays.** T. L. Tal<sup>1</sup>, C. Kilty<sup>2</sup>, N. Kleinstreuer<sup>4</sup>, T. Toimela<sup>3</sup>, R. Sarkanen<sup>3</sup>, T. B. Knudsen<sup>5</sup>, B. Kennedy<sup>2</sup>, and S. Padilla<sup>1</sup>. <sup>1</sup>ISTD, US EPA, Research Triangle Park, NC; <sup>2</sup>University College Dublin, Dublin, Ireland; <sup>3</sup>FICAM, University of Tampere, Tampere, Finland; <sup>4</sup>ILS, Inc./NICEATM, Research Triangle Park, NC; and <sup>5</sup>NCCT, US EPA, Research Triangle Park, NC.

**Abstract 242; Poster Board 408**

**Airway Epithelial Injury, Fibroblast Changes, and Cytokine/Chemokine Profiles Induced by Exposure of Human EpiAirway-FT Tissues to Diacetyl Vapors.** W. M. Gwinn<sup>1</sup>, G. Flake<sup>1</sup>, R. W. Bousquet<sup>2</sup>, and D. L. Morgan<sup>1</sup>. <sup>1</sup>NTP Laboratory, NIEHS, Research Triangle Park, NC; and <sup>2</sup>Alion Science and Technology Corp, Research Triangle Park, NC.

**Abstract 254; Poster Board 420**

**Organophosphate Flame Retardants Affect Development and Neurotoxicity in Alternative Models.** M. Behl<sup>1</sup>, J. Hsieh<sup>1</sup>, T. J. Shafer<sup>2</sup>, W. Mundy<sup>2</sup>, W. A. Boyd<sup>1</sup>, J. H. Freedman<sup>1</sup>, S. Hunter<sup>2</sup>, K. A. Jarema<sup>2</sup>, S. Padilla<sup>2</sup>, and R. R. Tice<sup>1</sup>. <sup>1</sup>Toxicology, NIH, Research Triangle Park, NC; and <sup>2</sup>NHEERL, EPA, Research Triangle Park, NC.

**Abstract 256; Poster Board 422**

**Developmental Toxicity of Phase I and II ToxCast™ Chemicals to *Caenorhabditis elegans*.** W. A. Boyd<sup>1</sup>, M. Smith<sup>2</sup>, C. A. Co<sup>2</sup>, J. Pirone<sup>2</sup>, J. R. Rice<sup>1</sup>, and J. H. Freedman<sup>1</sup>. <sup>1</sup>NIEHS, Research Triangle Park, NC; and <sup>2</sup>Social & Scientific Systems, Durham, NC.

**Abstract 257; Poster Board 423**

**Comparative Effects of Brominated and Organophosphate Flame Retardants on *Caenorhabditis elegans* Feeding, Reproduction, and Growth.** J. R. Rice<sup>1</sup>, M. Behl<sup>1</sup>, C. A. Co<sup>2</sup>, M. Smith<sup>2</sup>, J. H. Freedman<sup>1</sup>, and W. A. Boyd<sup>1</sup>. <sup>1</sup>NIEHS, Research Triangle Park, NC; and <sup>2</sup>Social & Scientific Systems, Durham, NC.

**Poster Session: Metals**

**Chairperson(s):** Joshua Edwards, Department of Pharmacology, Midwestern University, Downers Grove, IL; and Mindy F. Reynolds, Washington College, Chestertown, MD.

**Abstract 324; Poster Board 543**

**Iron Incorporation to MnSOD Leads to the Formation of a Peroxidase: Possible Implications for Nutrition-Dependent Iron Toxicity.** D. Ganini da Silva, R. M. Petrovich, L. L. Edwards, and R. P. Mason. NIEHS, Research Triangle Park, NC.

**Abstract 338; Poster Board 557**

**Characterization of Aqueous Formulations of Tetra- and Pentavalent Forms of Vanadium at Various pH to Aid in the Test Article Selection for Toxicology Studies.** E. Mutlu<sup>1</sup>, T. Cristy<sup>2</sup>, S. Graves<sup>2</sup>, M. J. Hooth<sup>1</sup>, and S. Waidyanatha<sup>1</sup>. <sup>1</sup>Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC; and <sup>2</sup>Battelle Memorial Institute, Columbus, OH.

Monday, March 23, 9:30 AM to 12:30 PM, CC Exhibit Hall (cont'd)

**Poster Session: Stem Cell Biology in Toxicology Research**

**Chairperson(s):** Weida Tong, US FDA/NCTR, Jefferson, AR.

**Abstract 398; Poster Board 653**

**Using Human-Induced Pluripotent Stem Cells (iPSC) in High-Content Screening (HCS) to Prioritize Chemicals for Developmental Neurotoxicity Testing.** R. R. Tice<sup>1</sup>, O. Sirenko<sup>2</sup>, F. Parham<sup>1</sup>, E. F. Cromwell<sup>2</sup>, J. Hsieh<sup>1</sup>, S. DeLaura<sup>3</sup>, M. Behl<sup>1</sup>, and K. Ryan<sup>1</sup>. <sup>1</sup>NIH, NIEHS/DNTP, Research Triangle Park, NC; <sup>2</sup>Molecular Devices, Sunnyvale, CA; and <sup>3</sup>Cellular Dynamics International, Madison, WI.

Monday, March 23, 12:00 Noon to 1:30 PM, CC Room 5B

**Research Funding Luncheon: Multiple Perspectives on the Grant Process**

**Essentials in Grantsmanship from a Program Officer's Perspective**

Annette Kirshner, NIEHS Health Scientist Administrator, Research Triangle Park, NC

**The NIH Application Review Process from a SRO's Perspective**

Janice Allen, NIEHS Scientific Review Branch, Research Triangle Park, NC

Monday, March 23, 12:10 PM to 1:30 PM, CC Ballroom 6E

**Roundtable Session: Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century**

**Chairperson(s):** George M. Woodall, NCEA, US EPA, Research Triangle Park, NC; and Gary W. Miller, Emory University, Atlanta, GA.

**Abstract 411**

**Confronting and Overcoming the Barriers to Sharing Toxicological Research Data for Risk Assessment in the 21st Century.** G. M. Woodall<sup>1</sup>, G. W. Miller<sup>2</sup>, A. Simeonov<sup>3</sup>, R. A. Becker<sup>4</sup>, A. Pope<sup>5</sup>, P. J. Hakkinen<sup>6</sup>, P. H. Zigas<sup>7</sup>, and A. A. Rooney<sup>8</sup>. <sup>1</sup>US EPA, Research Triangle Park, NC; <sup>2</sup>Emory, Atlanta, GA; <sup>3</sup>NIH, Bethesda, MD; <sup>4</sup>ACC, Washington, DC; <sup>5</sup>BYU, Provo, UT; <sup>6</sup>NLM, Bethesda, MD; <sup>7</sup>ECU, Greenville, NC; and <sup>8</sup>NIEHS, Research Triangle Park, NC.

Monday, March 23, 1:00 PM to 4:30 PM, CC Exhibit Hall

**Poster Session: Alternatives to Mammalian Models II—Skin, Eye, Liver**

**Chairperson(s):** Seyoum Ayehunie, MatTek Corporation, Ashland, MA; and Andreas G. Schepky, Toxicology *In Vitro*, Beiersdorf AG, Hamburg, Germany.

**Abstract 421; Poster Board 108**

**ICCVAM Integrated Decision Strategy for Skin Sensitization.** J. M. Matheson<sup>1</sup>, Q. Zang<sup>2</sup>, J. Strickland<sup>2</sup>, N. Kleinstreuer<sup>2</sup>, D. G. Allen<sup>2</sup>, A. B. Lowit<sup>3</sup>, Jacobs<sup>4</sup>, and W. Casey<sup>5</sup>. <sup>1</sup>CPSC, Rockville, MD; <sup>2</sup>ILS/NICEATM, Research Triangle Park, NC; <sup>3</sup>EPA/OPP, Washington, DC; <sup>4</sup>FDA/CDER, Silver Spring, MD; and <sup>5</sup>NTP/NICEATM, Research Triangle Park, NC.

**Abstract 422; Poster Board 109**

***In Silico* Predictions of Skin Sensitization Using OECD QSAR Toolbox.** J. Strickland<sup>1</sup>, N. Y. Choksi<sup>1</sup>, D. G. Allen<sup>1</sup>, and W. Casey<sup>2</sup>. <sup>1</sup>ILS/NICEATM, Research Triangle Park, NC; and <sup>2</sup>NTP/NICEATM, Research Triangle Park, NC.

**Abstract 447; Poster Board 134**

**3D In Vitro Model of HepG<sup>2</sup> Cell Spheroids for Long-Term Exposure Studies and Toxicogenomics-Based Prediction of Drug-Induced Liver Injury.** S. Ramaiahgari<sup>1,2</sup>, S. Wink<sup>1</sup>, M. Coonen<sup>3</sup>, J. Kleinjans<sup>3</sup>, L. Price<sup>1,4</sup>, and B. van de Water<sup>1</sup>. <sup>1</sup>Leiden University, Maastricht, Netherlands; <sup>2</sup>NTP/BSB, Research Triangle Park, NC; <sup>3</sup>Maastricht University, Maastricht, Netherlands; and <sup>4</sup>OCellO, Leiden, Netherlands.

**Poster Session: Biomonitoring and Exposure Assessment**

**Chairperson(s):** Janis Hulla, SPK-ED-EC, USACE, Sacramento, CA.

**Abstract 491; Poster Board 208**

**Formulation Development and Validation of an Analytical Method for a Combination-Dose Formulation of Emtricitabine, Tenofovir Disoproxil Fumarate, and Efavirenz in Support of Rodent Toxicology Studies.** J. C. Blake<sup>1</sup>, J. Gilliam<sup>1</sup>, D. Coleman<sup>1</sup>, R. A. Fernando<sup>1</sup>, V. G. Robinson<sup>2</sup>, B. McIntyre<sup>2</sup>, and S. Waidyanatha<sup>2</sup>. <sup>1</sup>RTI International, Research Triangle Park, NC; and <sup>2</sup>Division of National Toxicology Program, NIEHS, Research Triangle Park, NC.

**Poster Session: Biological Modeling**

**Chairperson(s):** Andy Nong, Health Canada, Ottawa, ON, Canada.

**Abstract 740; Poster Board 622**

**Evaluating Epidemiological Associations between High Blood Concentrations of Poly Brominated Diphenyl Ether (PBDEs) and Altered Timing of Menarche: Are They Meaningful?** H. J. Clewell<sup>1</sup>, C. Peeples<sup>1</sup>, G. Song<sup>1</sup>, M. Yoon<sup>1</sup>, H. Wu<sup>1</sup>, M. Verner<sup>2</sup>, M. E. Andersen<sup>1</sup>, and M. P. Longnecker<sup>3</sup>. <sup>1</sup>The Hamner Institutes for Health Sciences, Research Triangle Park, NC; <sup>2</sup>Université de Montréal, Montreal, QC, Canada; and <sup>3</sup>National Institutes of Environmental Health Sciences, Research Triangle Park, NC.

**Abstract 757; Poster Board 639**

**Application of Reverse Dosimetry to Compare *In Vitro* and *In Vivo* Estrogen Receptor Activity.** Chang<sup>1</sup>, N. Kleinstreuer<sup>1</sup>, P. Ceger<sup>1</sup>, N. Y. Choksi<sup>1</sup>, J. Hsieh<sup>2</sup>, M. DeVito<sup>2</sup>, D. G. Allen<sup>1</sup>, and W. Casey<sup>3</sup>. <sup>1</sup>ILS/ NICEATM, Research Triangle Park, NC; <sup>2</sup>NIEHS/ NTP, Research Triangle Park, NC; and <sup>3</sup>NTP/ NICEATM, Research Triangle Park, NC.

**Featured Session: Meet the Directors**

**Chairperson(s):** Peter L. Goering, Society of Toxicology Vice President; US FDA-CDRH, Silver Spring, MD.

**A Conversation with Linda Birnbaum and Jim Jones**

**Lecturers:** Linda S. Birnbaum, NIEHS; and Jim Jones, US EPA

Monday, March 23, 2:00 PM to 4:45 PM, CC Ballroom 6E

**Workshop Session: Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment Approaches for Protecting Vulnerable Populations**

**Chairperson(s):** Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC; and Jane Ellen Simmons, US EPA, Research Triangle Park, NC.

**Abstract 797**

**Evaluating and Quantifying Stress for Inclusion in Cumulative Risk Assessment.** C. V. Rider<sup>1</sup>, and J. Simmons<sup>2</sup>.

<sup>1</sup>NTP/NIEHS, Research Triangle Park, NC; and <sup>2</sup>NHEERL/US EPA, Research Triangle Park, NC.

2:00 PM      **Introduction.** C. V. Rider. NTP/NIEHS, Research Triangle Park, NC.

Tuesday, March 24, 9:00 AM to 11:45 AM, CC Room 1

**Workshop Session: The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment**

**Chairperson(s):** Bethany R. Hannas, Toxicology & Environmental Research & Consulting, The Dow Chemical Company, Midland, MI; and Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC.

**Abstract 865**

9:00 AM      **The EDSP Screening Battery: A Work in Progress for Prioritizing Compounds for Quantitative Risk Assessment.** B. R. Hannas<sup>1</sup>, and C. V. Rider<sup>2</sup>. <sup>1</sup>The Dow Chemical Company, Midland, MI; and <sup>2</sup>NTP, NIEHS, Research Triangle Park, NC.

**Abstract 868**

10:06 AM      **Use of Computational Toxicology for Integrated Bioactivity-Exposure Prioritization of the EDSP Chemical Universe.** P. Browne<sup>1</sup>, R. Judson<sup>2</sup>, A. Dixon<sup>1</sup>, N. Kleinstreuer<sup>4</sup>, W. Casey<sup>3</sup>, D. R. Bergfelt<sup>1</sup>, T. D. Green<sup>1</sup>, R. Kent<sup>1</sup>, S. G. Lynn<sup>1</sup>, L. Touart<sup>1</sup>, and R. S. Thomas<sup>2</sup>. <sup>1</sup>OCSP, US EPA, Washington, DC; <sup>2</sup>ORD, US EPA, Research Triangle Park, NC; <sup>3</sup>ICEATM, NTP, Research Triangle Park, NC; and <sup>4</sup>ILS/NICEATM, Research Triangle Park, NC.

Tuesday, March 24, 9:00 AM to 12:30 PM, CC Exhibit Hall

**Poster Session: Systems Biology and Toxicology**

**Chairperson(s):** Nilson A. Assunção, Chemistry, Unifesp, Diadema, Brazil; and Weida Tong, US FDA/NCTR, Jefferson, AR.

**Abstract 904; Poster Board 129**

**RNA-Seq and Microarray Gene Expression Vies for Toxicogenomics Superiority.** W. Tong<sup>1</sup>, J. Xu<sup>1</sup>, P. R. Bushel<sup>2</sup>, S. S. Auerbach<sup>2</sup>, and C. Wang<sup>3</sup>. <sup>1</sup>FDA/ NCTR, Jefferson, AR; <sup>2</sup>NIEHS, Research Triangle Park, NC; and <sup>3</sup>Loma Linda University, Loma Linda, CA.

**Poster Session: Food Safety, In Vitro**

**Chairperson(s):** Monika Maier, Evonki Industries AG, Hanau, Germany.

**Abstract 944; Poster Board 171**

**Phytochemical Screening of Various Lots of *Echinacea* for Use in Toxicity Studies.** S. Waidyanatha<sup>1</sup>, T. Cristy<sup>2</sup>, S. Graves<sup>2</sup>, E. Mutlu<sup>1</sup>, and K. Ryan<sup>1</sup>. <sup>1</sup>Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC; and <sup>2</sup>Battelle Memorial Institute, Columbus, OH.

**Poster Session: Carcinogenesis I**

**Chairperson(s):** Suryanarayana V. Vulimiri, ORD/NCEA-W, US EPA, Washington, DC; and J. Craig Rowlands, The Dow Chemical Company, Midland, MI.

**Abstract 991; Poster Board 246**

**Silencing KRAS Overexpression in Cadmium- Transformed Prostate Epithelial Cells Mitigates Malignant Phenotype.** N. O. Ngalame, E. J. Tokar, and M. P. Waalkes. NTP, NIEHS, Research Triangle Park, NC.

**Poster Session: Oxidative Injury and Redox Biology**

**Chairperson(s):** Bhagavatula Moorthy, Pediatrics, Baylor College of Medicine, Houston, TX.

**Abstract 1041; Poster Board 329**

**Role of Plasma Antioxidants for Assessing the Response to Oxidative Stress by Systemic Inflammation.** M. B. Kadiiska. NIEHS/NIH, Research Triangle Park, NC.

**Poster Session: Gene Regulation and Signal Transduction**

**Chairperson(s):** Saurabh Vispute, St. John's University, Fresh Meadows, NY.

**Abstract 1092; Poster Board 440**

**Human Cytochrome P450 2C8 (CYP2C8) Is a Novel Target of Peroxisome Proliferator-Activated Receptor  $\alpha$  (PPAR $\alpha$ ) in Human Liver.** N. L. Makia, S. Surapureddi, and J. A. Goldstein. Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

**Poster Session: Immunotoxicity I**

**Chairperson(s):** Courtney E. Sulentic, Pharmacology and Toxicology, Wright State University, Dayton, OH.

**Abstract 1155; Poster Board 552**

**Enhanced Histopathology in an Immunotoxicity Tiered Testing Strategy.** R. P. Frawley, S. Elmore, D. Malarkey, and D. Germolec. National Toxicology Program, NIEHS, Research Triangle Park, NC.

**Poster Session: In Vitro Cardiovascular Safety**

**Chairperson(s):** Srikanth Nadadur, NIEHS, Research Triangle Park, NC.



**Poster Session: Alternatives to Mammalian Models III**

**Chairperson(s):** Amos O. Abolaji, Biochemistry, University of Ibadan, Ibadan, Nigeria; and James M. McKim, Investigative Toxicology, IONTOX, LLC, Kalamazoo, MI.

**Abstract 1179; Poster Board 610**

**Correlation of Tox21 and ToxCast *In Vitro* and Small Model Organism Outcomes to Rat Oral Toxicity.** W. W. Polk<sup>1</sup>, N. Kleinstreuer<sup>1</sup>, J. Strickland<sup>1</sup>, M. Paris<sup>1</sup>, D. G. Allen<sup>1</sup>, and W. Casey<sup>2</sup>. <sup>1</sup>ILS/ NICEATM, Research Triangle Park, NC; and <sup>2</sup>NTP/ NICEATM, Research Triangle Park, NC.

Tuesday, March 24, 1:00 PM to 4:30 PM, CC Exhibit Hall

**Poster Session: Nanotoxicology, Carbon-Based Nanomaterials**

**Chairperson(s):** David Warheit, DuPont Haskell Laboratories, Newark, DE.

**Abstract 1240; Poster Board 107**

***In Vivo* Evidence of Free Radical Formation in the Mouse Lung and Distant Organs after Exposure to Single-Walled Carbon Nanotubes.** E.R. Kisin<sup>1</sup>, A. R. Murray<sup>1,2</sup>, M. B. Kadiiska<sup>3</sup>, and A.A. Shvedova<sup>1,2</sup>. <sup>1</sup>PPRB, NIOSH, Morgantown, WV; <sup>2</sup>Physiology/Pharmacology, WVU, Morgantown, WV; and <sup>3</sup>NIEHS/NIH, Research Triangle Park, NC.

**Abstract 1247; Poster Board 114**

**Differential Sensitivity of Healthy and Asthmatic Human Bronchial Epithelia to Multiwalled Carbon Nanotubes.** S. Hussain<sup>1</sup>, P. R. Bushel<sup>2</sup>, K. Gerrish<sup>3</sup>, and S. Garantzotis<sup>1</sup>. <sup>1</sup>Clinical Research Unit, NIEHS, Research Triangle Park, NC; <sup>2</sup>Biostatistics Branch, NIEHS, Research Triangle Park, NC; and <sup>3</sup>Molecular Genomics Core, NIEHS, Research Triangle Park, NC.

**Poster Session: Skin**

**Chairperson(s):** Carol S. Auletta, Program Management, Huntingdon Life Sciences, East Millstone, NJ; and Gabriel A. Knudsen, Toxicology and Toxicokinetics, NCI at NIEHS, Research Triangle Park, NC.

**Abstract 1267; Poster Board 135**

**Dermal Uptake of Tetrabromobisphenol A (TBBPA) by Female Wistar Han Rat or Human Skin.** G. A. Knudsen<sup>1</sup>, K. L. McIntosh<sup>1</sup>, J. M. Sanders<sup>1</sup>, M. F. Hughes<sup>2</sup>, and L. S. Birnbaum<sup>1</sup>. <sup>1</sup>Toxicology and Toxicokinetics, NCI at NIEHS, Research Triangle Park, NC; and <sup>2</sup>NHEERL, US EPA- ORD, Research Triangle Park, NC.

**Poster Session: Computational Toxicology and Data Integration I**

**Chairperson(s):** Amy Clippinger, PETA International Science Consortium, Ltd., Norfolk, VA.

**Abstract 1314; Poster Board 211**

**Updates to an Integrated Testing Strategy for Skin Sensitization Potency.** J. Jaworska<sup>1</sup>, J. Pirone<sup>2</sup>, J. Strickland<sup>3</sup>, N. Kleinstreuer<sup>3</sup>, D. G. Allen<sup>3</sup>, and W. Casey<sup>4</sup>. <sup>1</sup>P&G NV, Bever, Belgium; <sup>2</sup>SSS, Inc., Durham, NC; <sup>3</sup>ILS/NICEATM, Research Triangle Park, NC; and <sup>4</sup>NTP/NICEATM, Research Triangle Park, NC.

**Abstract 1315; Poster Board 212**

**Impact of Local Lymph Node Assay Uncertainty on Predictions of a Bayesian Network Integrated Testing Strategy for Skin Sensitization Potency.** J. Pirone<sup>1</sup>, M. Smith<sup>1</sup>, J. Strickland<sup>2</sup>, W. Casey<sup>3</sup>, and J. Jaworska<sup>4</sup>. <sup>1</sup>SSS, Inc., Durham, NC; <sup>2</sup>ILS/NICEATM, Research Triangle Park, NC; <sup>3</sup>NTP/NICEATM, Research Triangle Park, NC; and <sup>4</sup>P&G NV, Bever, Belgium.

**Abstract 1335; Poster Board 232**

**Using ToxCast/Tox21 Assays and QSAR Modeling to Predict Androgen Receptor Pathway Activity.** L. Kleinstreuer<sup>1</sup>, Q. Zang<sup>1</sup>, D. L. Filer<sup>2</sup>, M. T. Martin<sup>2</sup>, K. Houck<sup>2</sup>, D. G. Allen<sup>1</sup>, W. Casey<sup>3</sup>, and R. Judson<sup>2</sup>. <sup>1</sup>ILS/NICEATM, Research Triangle Park, NC; <sup>2</sup>EPA/ORD/NCCT, Research Triangle Park, NC; and <sup>3</sup>NTP/NICEATM, Research Triangle Park, NC.

**Poster Session: Food Safety, In Vivo**

**Chairperson(s):** Ronald Riley, USDA, Athens, GA.

**Abstract 1398; Poster Board 331**

**Six-Month Dosed-Feed Toxicity of Chitosan in Harlan Sprague-Dawley Rats.** B. C. Sayers, M. Cora, S. Elmore, G. E. Kissling, M. Vallant, and C.R. Blystone. Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.

**Poster Session: Reproductive Toxicology I**

**Chairperson(s):** Jeffrey S. Moffit, FORUM Pharmaceuticals Inc, Boston, MA; and Vicki Sutherland, Toxicology Branch, National Toxicology Program, Research Triangle Park, NC.

**Abstract 1421; Poster Board 407**

**Current Use of the National Toxicology Program (NTP) Modified One-Generation Reproduction (MOG) Study.** P. M. Foster, M. Behl, B. McIntyre, and V. Sutherland. National Toxicology Program, NIEHS, Research Triangle Park, NC.

**Abstract 1422; Poster Board 408**

**Endocrine Activity of Bisphenol AF As Assessed by a Modified One-Generation Reproduction (MOG) Study in Harlan Sprague-Dawley Rats.** V. Sutherland<sup>1</sup>, B. McIntyre<sup>1</sup>, K. Turner<sup>2</sup>, H. C. Cunney<sup>1</sup>, L. E. Gray<sup>3</sup>, M. Mercado<sup>1</sup>, and P. M. Foster<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>DST, RTI, Research Triangle Park, NC; and <sup>3</sup>TAD/NHEERL/ORD, USEPA, Research Triangle Park, NC.

**Abstract 1423; Poster Board 409**

**NTP Modified One-Generation Assessment (MOG) of 2-Ethylhexyl p-Methoxycinnamate (EHMC) in Hsd:Sprague-Dawley SD Rats.** B. McIntyre<sup>1</sup>, K. Turner<sup>2</sup>, S. Waidyanatha<sup>1</sup>, H. C. Cunney<sup>1</sup>, and P. M. Foster<sup>1</sup>. <sup>1</sup>NIEHS/NTP, Research Triangle Park, NC; and <sup>2</sup>RTI International, Research Triangle Park, NC.

**Abstract 1437; Poster Board 423**

**Comparative Mammary Gland Development in Male and Female Harlan Sprague-Dawley Rats: From Bud Development to Adulthood.** A. J. Filgo<sup>1,2</sup>, J. Foley<sup>3</sup>, C. Reed<sup>1</sup>, V. Chappell<sup>1</sup>, and S. E. Fenton<sup>1</sup>. <sup>1</sup>NTP Laboratory, NIEHS, Research Triangle Park, NC; <sup>2</sup>Curriculum of Toxicology, UNC, Chapel Hill, NC; and <sup>3</sup>CMPB, NIEHS, Research Triangle Park, NC.

**Poster Session: Reproductive Toxicology II**

**Chairperson(s):** Caitlin Murphy, University of Texas at Austin, Austin, TX; and Brandiese Beverly, US EPA, Durham, NC.

**Abstract 1441; Poster Board 429**

**Simvastatin Reduces Fetal Testosterone Production and Permanently Alters Reproductive Tract Development in the Male Crl:CD(SD) Rat.** B. Beverly<sup>1,2</sup>, J. R. Furr<sup>2</sup>, C. Lambright<sup>2</sup>, B. McIntyre<sup>3</sup>, P.M. Foster<sup>3</sup>, G. Travlos<sup>3</sup>, V. S. Wilson<sup>2</sup>, and L. E. Gray<sup>2</sup>. <sup>1</sup>ORISE, Oak Ridge, TN; <sup>2</sup>US EPA, Durham, NC; and <sup>3</sup>NIH, Research Triangle Park, NC.

**Abstract 1452; Poster Board 440**

**Individual and Mixture Endocrine Activity of BPS and BPC Using *In Vitro* Estrogenic/ Antiandrogenic Transcriptional Activation Assays and the *In Vivo* Uterotrophic Assay.** J.M. Conley<sup>1,2</sup>, M. Cardon<sup>2</sup>, N. Evans<sup>2</sup>, L. E. Gray<sup>2</sup>, P.M. Foster<sup>3</sup>, J. R. Furr<sup>2</sup>, B. R. Hannas<sup>2</sup>, P. Hartig<sup>2</sup>, V. Sutherland<sup>3</sup>, and V. S. Wilson<sup>2</sup>. <sup>1</sup>ORISE Postdoctoral Fellow, USEPA, Research Triangle Park, NC; <sup>2</sup>TAD/ NHEERL/ORD, USEPA, Research Triangle Park, NC; and <sup>3</sup>NTP/NIEHS, NIH, Research Triangle Park, NC.

**Abstract 1453; Poster Board 441**

**Perinatal Exposures to Bisphenol (BP) Analogs and Their Effects on Early and Pubertal Development in CD-1 Mice.** K. Tucker<sup>1,2</sup>, S. Ye<sup>3</sup>, A. Calafat<sup>3</sup>, G. E. Kissling<sup>4</sup>, and S. E. Fenton<sup>2</sup>. <sup>1</sup>Curriculum in Toxicology, UNC Chapel Hill, Chapel Hill, NC; <sup>2</sup>NTPL, DNTP, NIEHS, Research Triangle Park, NC; <sup>3</sup>DLS, NCEH, CDC, Atlanta, GA; and <sup>4</sup>DIR, NIEHS, Research Triangle Park, NC.

**Poster Session: Endocrine Toxicology**

**Chairperson(s):** Christopher Thompson, Scripps Research Institute, San Diego, CA; and Katie B. Paul, Human Safety Regulatory Toxicology, Bayer CropScience, Durham, NC.

**Abstract 1471; Poster Board 505**

**Systematic Review of Bisphenol A (BPA) Analogues and Analysis of High-Throughput Screening Data.** K. E. Pelch<sup>1</sup>, V. R. Walker<sup>1</sup>, J. Hsieh<sup>1</sup>, S. S. Auerbach<sup>1</sup>, D. L. Svoboda<sup>1</sup>, M. DeVito<sup>1</sup>, S. Holmgren<sup>2</sup>, R. R. Tice<sup>1</sup>, and K. Thayer<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Morrisville, NC; and <sup>2</sup>OSIM, NIEHS, Morrisville, NC.

Tuesday, March 24, 1:00 PM to 4:30 PM, CC Exhibit Hall (cont'd)

**Poster Session: Neurotoxicology, Neurodegenerative Disease -Parkinson's Disease**

**Chairperson(s):** Lena Smirnova, Environmental Health Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD.

**Abstract 1517; Poster Board 552**

**Diphenyleiiodonium at Low Dose Rescues Disease Phenotype in Models of Parkinson's Disease.** Q. Wang, L. Qian, B. Wilson, and J. Hong. Laboratory of Neurobiology, NIEHS, Research Triangle Park, NC. Sponsor: S. Hussain.

Tuesday, March 24, 1:30 PM to 4:15 PM, CC Ballroom 6B

**Symposium Session: Incorporating In Vitro Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science**

**Chairperson(s):** Barbara A. Wetmore, The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and Warren Casey, NIEHS, Durham, NC.

**Abstract 1603**

1:30 PM **Incorporating *In Vitro* Pharmacokinetic Data and Tools into Toxicity Testing and Risk Assessments: State of the Science.** B. A. Wetmore<sup>1</sup>, and W. Casey<sup>2</sup>. <sup>1</sup>The Hamner Institutes for Health Sciences, Research Triangle Park, NC; and <sup>2</sup>NICEATM, NIEHS, Research Triangle Park, NC.

**Abstract 1606**

2:39 PM **Using Reverse Toxicokinetic Models to Correlate In Vitro and In Vivo Estrogen Receptor Activity.** W. Casey. NIEHS, Durham, NC.

Tuesday, March 24, 1:30 PM to 4:15 PM, CC Room 8

**Platform Session: Investigating Mode of Action in Chemical Carcinogenesis**

**Chairperson(s):** James E. Klaunig, Indiana University, Ellettsville, IN; and B. Bhaskar Gollapudi, Exponent, Inc., Midland, MI.

**Abstract 1637**

3:02 PM **Evaluation of a Potential Mechanism for Formaldehyde-Induced Leukemia in p53-Haploinsufficient Mice.** D. L. Morgan<sup>1</sup>, D. Dixon<sup>1</sup>, M. P. Jokinen<sup>2</sup>, D. H. King<sup>1</sup>, H. Price<sup>3</sup>, G. Travlos<sup>1</sup>, R. A. Herbert<sup>1</sup>, J. E. French<sup>1</sup>, and M. P. Waalkes<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>ILS, Research Triangle Park, NC; and <sup>3</sup>Alion, Research Triangle Park, NC.

Tuesday, March 24, 7:30 PM to 9:00 PM, Marriott Marquis Marina Ballroom D

**Social Event: Tox ShowDown**

**Chairperson(s):** Sue M. Ford, St. John's University, Jamaica, NY; and Phil Wexler, NIH-NLM, Bethesda, MD.

**Workshop Session: Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements**

**Chairperson(s):** Cynthia V. Rider, NTP/NIEHS, Research Triangle Park, NC; and Joseph M. Betz, Office of Dietary Supplements, NIH, Bethesda, MD.

**Abstract 1672**

9:00 AM      **Evaluating Similarity across Related Complex Mixtures: The Challenge of Herbal Supplements.** C. V. Rider<sup>1</sup>, and J. M. Betz<sup>2</sup>. <sup>1</sup>NTP/NIEHS, Research Triangle Park, NC.  
**Introduction.** C. V. Rider. NTP/NIEHS, Research Triangle Park, NC.

**Abstract 1675**

10:03 AM      **Fingerprinting Methods for Identification and Authentication of Botanical Supplements.** J. Harnly. USDA, Beltsville, MD. Sponsor: C. Rider.

**Abstract 1676**

10:32 AM      **Moving forward on Complex Herbal Mixtures at the National Toxicology Program.** C. V. Rider, B. Collins, S. S. Auerbach, M. DeVito, C. R. Blystone, and S. Waidyanatha. NTP/NIEHS, Research Triangle Park, NC.

**Abstract 1677**

11:01 AM      **Steps toward Using Statistical Approaches for Determining Sufficient Similarity.** C. Gennings<sup>2</sup>, and C. V. Rider<sup>1</sup>. <sup>1</sup>NTP/NIEHS, Research Triangle Park, NC; and <sup>2</sup>Department of Preventive Medicine, Mount Sinai, New York, NY.

Wednesday, March 25, 9:00 AM to 11:45 AM, CC Room 1

**Platform Session: Applications of ToxCast/Tox21 Data: Confidence and Predictivity**

**Chairperson(s):** Warren Casey, NIEHS, Durham, NC; and Lisa M. Sweeney, NAMRU Dayton, Henry M. Jackson Foundation, Kettering, OH.

**Abstract 1684**

9:00 AM      **Using Bioactivity-Based Read-Across (BaBRA) to Characterize the ToxCast Library.** W. Casey<sup>1</sup>, D. G. Allen<sup>2</sup>, and N. Kleinstreuer<sup>2</sup>. <sup>1</sup>NIEHS/NTP, Research Triangle Park, NC; and <sup>2</sup>ILS/NICEATM, Research Triangle Park, NC.

**Abstract 1690**

11:18 AM      **Assessing Confidence in Tox21.** J. R. Bucher, R. R. Tice, R. S. Paules, W. Casey, A. A. Rooney, K. Thayer, M. DeVito. National Toxicology Program, NIEHS, Research Triangle Park, NC.

### Poster Session: Developmental Toxicology I

**Chairperson(s):** Christopher J. Bowman, Pfizer, Groton, CT; and Natasha S. Catlin, Pathobiology, Brown University, Providence, RI.

#### Abstract 1717; Poster Board 120

**Maternal and Prenatal Dose Range-Finding Study of 4-Methylcyclohexanemethanol (MCHM) in Harlan Sprague-Dawley Rats.** C. R. Blystone<sup>1</sup>, E. Mylchreest<sup>2</sup>, H. C. Cunny<sup>1</sup>, B. McIntyre<sup>1</sup>, C. D. Hebert<sup>2</sup>, and S. S. Auerbach<sup>1</sup>. <sup>1</sup>Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC; and <sup>2</sup>Southern Research Institute, Birmingham, AL.

#### Abstract 1718; Poster Board 121

**Prenatal Developmental Toxicity of Tris (Chloropropyl)phosphate (TCPP) following Oral Exposure in Hsd:Sprague-DawleySD Rats.** K. Ryan<sup>1</sup>, M. D. Stout<sup>1</sup>, K. J. Turner<sup>2</sup>, G. E. Kissling<sup>3</sup>, M. Vallant<sup>1</sup>, P. M. Foster<sup>1</sup>, and B. McIntyre<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Morrisville, NC; <sup>2</sup>RTI International, Research Triangle Park, NC; and <sup>3</sup>DIR, NIEHS, Research Triangle Park, NC.

#### Abstract 1719; Poster Board 122

**In Utero Exposure to the Vinca Alkaloid Vinpocetine Is Associated with Rat Embryo-Fetal Toxicity.** N. Catlin<sup>1</sup>, I. Surh<sup>1</sup>, P. M. Foster<sup>1</sup>, E. Mylchreest<sup>2</sup>, H. C. Cunny<sup>3</sup>, M. Vallant<sup>3</sup>, and B. McIntyre<sup>1</sup>. <sup>1</sup>Toxicology Branch, DNTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>Southern Research Institute, Birmingham, AL; and <sup>3</sup>Program Operations Branch, DNTP, NIEHS, Research Triangle Park, NC.

#### Abstract 1730; Poster Board 133

**Hepatic Mitochondrial Alteration in CD1 Mice Associated with Prenatal Exposures to Low Doses of Perfluorooctanoic Acid (PFOA).** E. Quist<sup>1,2</sup>, A. J. Filgo<sup>1,3</sup>, C. A. Cummings<sup>6</sup>, G. E. Kissling<sup>4</sup>, M. J. Hoenerhoff<sup>5</sup>, and S. E. Fenton<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>Comparative Biomedical Sciences, CVM, NCSU, Raleigh, NC; <sup>3</sup>Curriculum in Toxicology, UNC, Chapel Hill, NC; <sup>4</sup>DIR, NIEHS, Research Triangle Park, NC; <sup>5</sup>Unit for Laboratory Animal Medicine, University of Michigan, Ann Arbor, MI; and <sup>6</sup>Ultrapath Imaging, Durham, NC.

### Poster Session: Risk Assessment III

**Chairperson(s):** Judith A. MacGregor, Toxicology Consulting Services, Bonita Springs, FL.

#### Abstract 1863; Poster Board 404

**Problem Formulation of Complex Environmental Health Questions: Utilizing Text Mining to Address Challenges of a Literature-Based Evaluation of Transgenerational Health Effects.** V. R. Walker<sup>1</sup>, S. Holmgren<sup>2</sup>, K. E. Pelch<sup>1</sup>, B. Howard<sup>3</sup>, R. Shah<sup>3,4</sup>, K. Thayer<sup>1</sup>, and A. A. Rooney<sup>1</sup>. <sup>1</sup>DNTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>NIEHS, Research Triangle Park, NC; <sup>3</sup>Sciome LLC, Research Triangle Park, NC; and <sup>4</sup>SSS, Durham, NC.

**Poster Session: Regulation/Policy**

**Chairperson(s):** Katy O. Goyak, ExxonMobil Biomedical Sciences, Inc., Annandale, NJ.

**Abstract 1910; Poster Board 510**

**Assessing NTP's Effectiveness: A Case Study on Hexavalent Chromium.** Y. Xie<sup>1</sup>, S. Holmgren<sup>2</sup>, D. Andrews<sup>1</sup>, and M. S. Wolfe<sup>1</sup>. <sup>1</sup>DNTP, NIEHS, Research Triangle Park, NC; and <sup>2</sup>OD, NIEHS, Research Triangle Park, NC. Sponsor: J. Bucher.

**Abstract 1911; Poster Board 511**

**Using Acute Oral Toxicity Data to Estimate Acute Dermal Hazard Classification and Labeling of Pesticides.** M. Paris<sup>1</sup>, J. Strickland<sup>1</sup>, D. G. Allen<sup>1</sup>, and W. Casey<sup>2</sup>. <sup>1</sup>ILS/NICEATM, Research Triangle Park, NC; and <sup>2</sup>NTP/NICEATM, Research Triangle Park, NC.

**Poster Session: Medical Devices: Risk Assessment and Test Methods**

**Chairperson(s):** Ron P. Brown, US FDA, Silver Spring, MD; and Lori H. Moilanen, Corporate Toxicology and Regulatory Services, 3M, Saint Paul, MN.

**Abstract 2022; Poster Board 663**

**NTP Studies of N,N-Dimethyl-p-toluidine (DMPT), a Component in Medical Devices and Dental Material.** K. R. Shockley<sup>1</sup>, D. L. Morgan<sup>1</sup>, A. Brix<sup>1</sup>, G. Flake<sup>1</sup>, J. Foley<sup>1</sup>, Y. Wang<sup>1</sup>, A. R. Pandiri<sup>2</sup>, B. Mahler<sup>2</sup>, O. Lyght<sup>3</sup>, K. Gerrish<sup>1</sup>, and J. K. Dunnick<sup>1</sup>. <sup>1</sup>National Institute of Environmental Health Sciences, Research Triangle Park, NC; <sup>2</sup>Experimental Pathology Laboratories, Inc., Durham, NC; and <sup>3</sup>Integrated Laboratory Systems, Research Triangle Park, NC.

**Poster Session: Carcinogenesis II**

**Chairperson(s):** Helmut Zarbl, Environmental and Occupational Health

**Abstract 2041; Poster Board 117**

**False Positive Rates in National Toxicology Program Rodent Carcinogenicity Studies.** G. E. Kissling<sup>1</sup>, J. K. Haseman<sup>2</sup>, and E. Zeiger<sup>3</sup>. <sup>1</sup>Biostatistics Branch, NIEHS, Research Triangle Park, NC; <sup>2</sup>J.K. Haseman Consulting, Raleigh, NC; and <sup>3</sup>Errol Zeiger Consulting, Chapel Hill, NC.

**Poster Session: Disposition and Pharmacokinetics: Drugs, Chemicals, and Transporters**

**Chairperson(s):** Timothy Fennell, RTI International, Research Triangle Park, NC; and Abdel M. Kadry, Office of Research and Development, National Center for Environmental Assessment, US EPA, Washington, DC.

**Abstract 2095; Poster Board 205**

**Biological Fate of the Emerging Brominated Flame Retardant, Decabromodiphenyl Ethane, in Female Sprague-Dawley Rats.** E. P. Hull, G. A. Knudsen, J. M. Sanders, and L. S. Birnbaum. NCI/NIEHS, Research Triangle Park, NC.

**Abstract 2099; Poster Board 209**

**An Approach for Investigating the Toxicity of 2,2-Dimorpholinodiethyl Ether (DMDEE) in Mice and Rats.** G. K. Hinkley<sup>1</sup>, J. D. McDonald<sup>2</sup>, M. Doyle-Eisele<sup>2</sup>, M. DeVito<sup>1</sup>, P. M. Foster<sup>1</sup>, and S. Waidyanatha<sup>1</sup>. <sup>1</sup>Division of the National Toxicology Program, National Institutes of Environmental Health Sciences, Research Triangle Park, NC; and <sup>2</sup>Lovelace Respiratory Research Institute, Albuquerque, NM.

**Abstract 2100; Poster Board 210**

**The Disposition of 2-Ethylhexyl Tetrabromobenzoate (TBB) in Female Sprague-Dawley Rats after Administration of Single or Repeated Doses by Gavage.** J. M. Sanders, G. A. Knudsen, and L. S. Birnbaum. NCI, Research Triangle Park, NC.

**Poster Session: Neurotoxicology, General**

**Chairperson(s):** Vijay R. More, Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Durham, NC.

**Abstract 2112; Poster Board 225**

**Lipid-Sensing Transcription Factor Peroxisome Proliferator-Activated Receptor Alpha (PPAR- $\alpha$ ) Regulates Blood-Brain Barrier Efflux Transporter Expression.** V. R. More, C. Campos, and D. Miller. Laboratory of Toxicology and Pharmacology, National Institute of Environmental Health Sciences, Durham, NC.

**Poster Session: Bioinformatics**

**Chairperson(s):** Janet Moser, Chemical Security Analysis Center, Aberdeen Proving Ground, MD.

**Abstract 2195; Poster Board 410**

**Chemical Effects in Biological Systems (CEBS) Database: Advanced Histopathology Search Applications.** I. Lea<sup>1</sup>, A. Rashid<sup>1</sup>, C. Favaro<sup>1</sup>, and Fostel<sup>2</sup>. <sup>1</sup>Vistronix, Durham, NC; and <sup>2</sup>NIEHS, Research Triangle Park, NC. Sponsor: M. Hooth.

**Abstract 2201; Poster Board 416**

**Development of a Framework for an Environmental Health Science Language.** C. Lawler<sup>1</sup>, A. Haugen<sup>1</sup>, R. R. Boyles<sup>1</sup>, A. Dearry<sup>1</sup>, C. J. Mattingly<sup>2</sup>, and M. Haendel<sup>3</sup>. <sup>1</sup>NIEHS, Research Triangle Park, NC; <sup>2</sup>North Carolina State University, Raleigh, NC; and <sup>3</sup>Oregon Health Sciences University, Portland, OR.

**Poster Session: Computational Toxicology and Data Integration II**

**Chairperson(s):** Susan C. Tilton, Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR.

**Abstract 2207; Poster Board 424**

**Developing Quantitative Structure Activity Relationship (QSAR) Models for Effects on Nematode Larval Growth and Zebrafish Embryonic Development.** J. Hsieh<sup>1</sup>, A. Sedykh<sup>3</sup>, N. Kleinstreuer<sup>2</sup>, J. Franzosa<sup>4</sup>, W. A. Boyd<sup>1</sup>, and R. R. Tice<sup>1</sup>. <sup>1</sup>DNTP, NIEHS, Research Triangle Park, NC; <sup>2</sup>Integrated Laboratory Systems, Inc, Morrisville, NC; <sup>3</sup>MultiCASE Inc., Beachwood, OH; and <sup>4</sup>NCCT, US EPA, Research Triangle Park, NC.



**Abstract 2223; Poster Board 440**

**HTS and SAR Analysis of Chemicals from the Elk River Spill.** S. S. Auerbach<sup>1</sup>, N. Y. Choksi<sup>2</sup>, S. Ferguson<sup>1</sup>, J. Hsieh<sup>1</sup>, D. L. Svoboda<sup>3</sup>, G. J. Myatt<sup>4</sup>, M. Wampole<sup>5</sup>, A. Sedykh<sup>6</sup>, M. Lawless<sup>7</sup>, J. Prous<sup>8</sup>, N. J. Walker<sup>1</sup>, S. Masten<sup>1</sup>, M. S. Wolfe<sup>1</sup>, R. R. Tice<sup>1</sup>, and J.R. Bucher<sup>1</sup>. <sup>1</sup>NIEHS/DNTP, Research Triangle Park, NC; <sup>2</sup>ILS Inc, Research Triangle Park, NC; <sup>3</sup>SSS Inc., Durham, NC; <sup>4</sup>Leadscope, Inc., Columbus, OH; <sup>5</sup>Thompson Reuters, New York, NY; <sup>6</sup>MultiCASE Inc., Beachwood, OH; <sup>7</sup>Simulations Plus, Inc., Lancaster, CA; and <sup>8</sup>Prous Institute for Biomedical

**Abstract 2237; Poster Board 454**

**In Silico Prediction of Physicochemical Properties of Environmental Chemicals in Combination of Molecular Fingerprints and Machine Learning Approaches.** Q. Zang<sup>1</sup>, K. Mansouri<sup>2</sup>, D. G. Allen<sup>1</sup>, N. Kleinstreuer<sup>1</sup>, W. Casey<sup>3</sup>, and R. Judson<sup>2</sup>. <sup>1</sup>ILS/ NICEATM, Research Triangle Park, NC; <sup>2</sup>EPA/ORD/ NCCT, Research Triangle Park, NC; and <sup>3</sup>NTP/ NICEATM, Research Triangle Park, NC.

**Poster Session: Epigenetics**

**Chairperson(s):** Tao Chen, School of Public Health, Soochow University, Suzhou, China; and Asok K. Dasgupta, National Center for Natural Product Research, University of Mississippi, University, MS.

**Abstract 2256; Poster Board 519**

**Biological Impact of Repetitive Element-Mediated Changes in Transcription after Exposure to Cocaine.** T. Wang<sup>1</sup>, J. Feng<sup>2</sup>, J. Santos<sup>1</sup>, M. Cahill<sup>2</sup>, L. Shen<sup>2</sup>, D. Fargo<sup>1</sup>, E. Nestler<sup>2</sup>, and R. Woychik<sup>1</sup>. <sup>1</sup>NIEHS, Durham, NC; and <sup>2</sup>Mount Sinai School of Medicine, New York, NY.

**Poster Session: Kidney**

**Chairperson(s):** Monica Valentovic, Pharmacology, Physiology and Toxicology, Marshall University School of Medicine, Huntington, WV.

**Abstract 2275; Poster Board 539**

**Renal Tubular Pigmentation Associated with Senna Administration.** G. A. Willson<sup>1</sup>, D. Malarkey<sup>2</sup>, N. Allison<sup>1</sup>, J. K. Dunnick<sup>2</sup>, J. F. Hardisty<sup>1</sup>, and R. A. Miller<sup>1</sup>. <sup>1</sup>Experimental Pathology Laboratories, Inc., Durham, NC; and <sup>2</sup>NIEHS, NIH/ DHHS, Research Triangle Park, NC.

**Workshop Session: Increasing Interest and Engagement in Toxicology and STEM Disciplines: The Multiple Modalities and Impact of Research and Internship Opportunities for High School and Undergraduate Students**

**Chairperson(s):** Richard S. Pollenz, Cell Biology, University of South Florida, Tampa, FL; and William D. Atchison, Department of Pharmacology/Toxicology, Michigan State University, East Lansing, MI.

**Abstract 2388**

2:25 PM **Increasing Environmental Health Literacy: A Model for High School and Undergraduate Summer Internship Programs in Government.** T.R. Collins. Office of Fellows' Career Development, NIEHS, Research Triangle Park, NC. Sponsor: R. Pollenz.

Wednesday, March 25, 1:30 PM to 4:15 PM, CC Ballroom 6C

**Workshop Session: Integrating Gene Expression Profiling into High-Throughput Toxicity Testing**

**Chairperson(s):** Chris Corton, US EPA, Durham, NC; and Scott S. Auerbach, NIEHS/NTP, Morrisville, NC.

**Abstract 2391**

1:30 PM **Integrating Gene Expression Profiling into High-Throughput Toxicity Testing.** C. Corton<sup>1</sup>, S. S. Auerbach<sup>2</sup>. <sup>1</sup>US EPA, Durham, NC; and <sup>2</sup>NIEHS, Durham, NC.

Wednesday, March 25, 1:30 PM to 4:15 PM, CC Room 8

**Platform Session: Inflammation in Disease Due to Environmental Exposures**

**Chairperson(s):** Daniel J. Conklin, University of Louisville, Louisville, KY; and Dori Germolec, NIEHS, Research Triangle Park, NC.

**Abstract 2417**

1:50 PM **Toxicity of Subchronic *Aspergillus fumigatus* Exposures in BALB/cJ and B6C3F1/N Mouse Strains.** D. Germolec<sup>1</sup>, A. P. Nayak<sup>2</sup>, B. J. Green<sup>2</sup>, A. Lemons<sup>2</sup>, T. Croston<sup>2</sup>, W. T. Goldsmith<sup>2</sup>, and D. Beezhold<sup>2</sup>. <sup>1</sup>Toxicology Branch, NIEHS, Research Triangle Park, NC; and <sup>2</sup>Health Effects Laboratory Division, NIOSH, Morgantown, WV.

Wednesday, March 25, 4:30 PM to 5:50 PM, CC Room 6E

**Roundtable Session: The Future of Carcinogenicity Testing Safety Assessment Approaches for Product Development**

**Chairperson(s):** Yvonne Dragan, DuPont, Newark, DE; and James E. Klaunig, Indiana University, Ellettsville, IN.

4:50 PM **An NIEHS/NTP Perspective on the Future of Toxicity and Carcinogenesis Testing.** L. S. Birnbaum. NIEHS, Research Triangle Park, NC.

Thursday, March 26, 9:00 AM to 11:45 AM, CC Room 6E

**Symposium Session: Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown, and Surprises!**

**Chairperson(s):** Srikanth S. Nadadur, Division of Extramural Research & Training, NIEHS, Research Triangle Park, NC; and Linda S. Birnbaum, NIEHS, Research Triangle Park, NC.

**Abstract 2433**

9:00 AM **Comprehensive Analysis of Nano Silver Toxicity Profiles: Known, Unknown and Surprises!** S. S. Nadadur, and L. S. Birnbaum. Division of Extramural Research & Training, NIEHS, Research Triangle Park, NC.

9:00 AM **Introduction.** S.S. Nadadur. NIEHS, Research Triangle Park, NC.

Thursday, March 26, 12:30 PM to 4:00 PM, Manchester Grand Hyatt Hillcrest

**Satellite Meeting: Updates on 21st Century Toxicology Activities and Related Efforts: Invited Presentations and Open Microphone.**

**Presented by: The Center for Alternatives to Animal Testing and Human Toxicology Project Consortium**

1:00 PM **Tox21 Update.** Alex Merrick, US National Toxicology Program

**Late-Breaking Poster Session: Computational Toxicology and Bioinformatics**

**Abstract 2641; Poster Board 346**

**Curation and Analysis of a Rodent Uterotrophic Database: Insights on Data Quality and Reproducibility.** P. Ceger<sup>1</sup>, N. Kleinstreuer<sup>1</sup>, D. G. Allen<sup>1</sup>, X. Chang<sup>1</sup>, J. Strickland<sup>1</sup>, Q. Zang<sup>1</sup>, J. T. Hamm<sup>1</sup>, E. Phillips<sup>1</sup>, B. Jones<sup>1</sup>, W. Casey<sup>2</sup>. <sup>1</sup>NICEATM, ILS, Research Triangle Park, NC, United States, and <sup>2</sup>NICEATM, Division of the National Toxicology Program, NIEHS, Research Triangle Park, NC, United States.

**Abstract 2644; Poster Board 349**

**Methods for Determining Optimal Cell-Type Selections for Covering Biological Space in HTS Toxicity Testing.** V. N. S. Sipes<sup>1</sup>, D. L. Svoboda<sup>2</sup>, D. Mav<sup>2</sup>, R. Shah<sup>2</sup>, R. S. Paules<sup>1</sup>, R. Judson<sup>3</sup>, S. S. Auerbach<sup>1</sup>. <sup>1</sup>NIH/NIEHS/DNTP, Research Triangle Park, NC, United States, <sup>2</sup>Sciome, Research Triangle Park, NC, United States, and <sup>3</sup>NCCT/ORD/EPA, Research Triangle Park, NC, United States.

**Abstract 2647; Poster Board 352**

**Gene Selection for Tox21 High-Throughput Transcriptomics.** R. Shah<sup>1</sup>, D. Mav<sup>1</sup>, R. Judson<sup>3</sup>, S. S. Auerbach<sup>2</sup>, D. L. Svoboda<sup>1</sup>, A. Karmaus<sup>3</sup>, D. Gerhold<sup>5</sup>, N. S. Sipes<sup>2</sup>, J. Collins<sup>2</sup>, E. A. Maull<sup>2</sup>, P. R. Bushel<sup>2</sup>, B. A. Merrick<sup>2</sup>, D. L. Mendrick<sup>4</sup>, R. S. Thomas<sup>3</sup>, R. S. Paules<sup>2</sup>. <sup>1</sup>Sciome LLC, Research Triangle Park, NC, United States, <sup>2</sup>NIEHS, Research Triangle Park, NC, United States, <sup>3</sup>EPA, Research Triangle Park, NC, United States, <sup>4</sup>FDA, Silver Spring, MD, United States, and <sup>5</sup>NCATS, Rockville, MD, United States.

**Late-Breaking Poster Session: Metals**

**Abstract 2526; Poster Board 158**

**Potential Role of Metallothionein in Manganese-Induced Cellular Aggregates.** W. Qu<sup>1</sup>, P. Zuo<sup>1</sup>, M. P. Waalkes<sup>1</sup>. <sup>1</sup>NTP, NIEHS, Durham, NC, United States.

**Late-Breaking Poster Session: Exposure Assessment/Biomonitoring**

**Abstract 2802; Poster Board 621**

**Exposure Assessment of BPA by Total “Backward” and Dietary “Forward” Intake Methods.** A. J. Schecter<sup>1</sup>, M. Lorber<sup>2</sup>, O. Päpke<sup>3</sup>, W. C. Shropshire<sup>4</sup>, K. Christensen<sup>5</sup>, L. S. Birnbaum<sup>6</sup>. <sup>1</sup>University of Louisville, Louisville, KY, United States, <sup>2</sup>US EPA, Washington, DC, United States, <sup>3</sup>Eurofins, Hamburg, Germany, <sup>4</sup>University of Texas School of Public Health, Dallas, TX, United States, <sup>5</sup>University of Wisconsin, Madison, WI, United States, and <sup>6</sup>NCI, NIH, Research Triangle Park, NC, United States.